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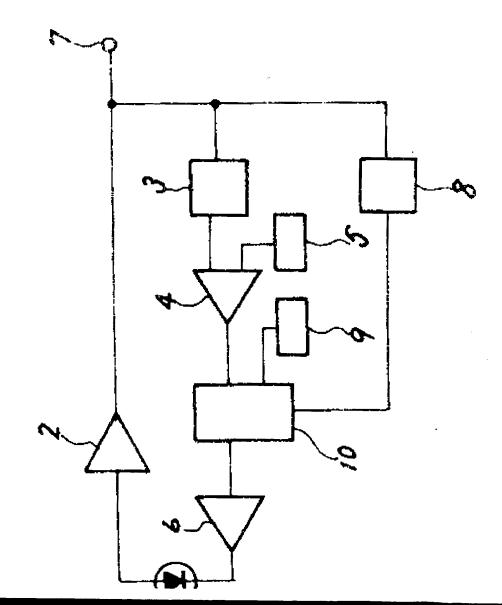
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## (54) AUTOMATIC GAIN CONTROL SYSTEM FOR PHOTORECEIVER

(57) Abstract:

PURPOSE: To elevate the reliability of an avalanche photodiode, by detecting whether the avalanche photodiode has detected light or not, and controlling the bias voltage of the avalanche photodiode so that it becomes a constant value, when the photodetection has been cut off.

CONSTITUTION: When a light signal has been input to the avalanche photodiode (APD)1, a signal current is output from the APD1, the currentvoltage conversion is executed by the amplifier 2, and it is output to the terminal 7. At the time of photodetection, whether light has been detected or not is detected by the carrier detector 8, the relay 10 is controlled by its output, the output of the AGC comparator 4 is connected to the DC amplifier 6, and the bias voltage of the APD1 is controlled so that the output current of the APD1 becomes constant. When the photodetection has been cut off, the detector 8 detects it, and controls the relay 10 so that the reference voltage



9 and the amplifier 6 are connected. In this way, the bias voltage of the APD1 drops, and when it has become a photodetecting state again, an excess current does not flow into the APD at the time of starting the photodetection, by detecting said state and closing the AGC loop, and the reliability of the APD is elevated.

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